

BRIEFER ARTICLES.

Botanical Papers before the American Association.—The papers read before the American Association for the Advancement of Science at the New York meeting, which are of interest to botanists, are as follows:

- W. J. Beal, Comparison of the epidermal system of different plants.
 W. J. Beal and C. E. St. John, Study of the hairs in *Silphium perfoliatum* and *Dipsacus laciniatus* in relation to insects.
 R. P. Bigelow, On the structure of the frond of *Champia parvula*.
 N. L. Britton, Notes on the flora of the Kittatinny mountains.
 J. M. Coulter and J. N. Rose, Development of the Umbellifer fruit.
 A. A. Crozier, Methods of branching in the fibro-vascular system of plants.
 W. G. Farlow, Apical growth in *Fucus*; also *Æcidium* on *Juniperus Virginiana*.
 W. M. Fontaine, The flora of the Potomac formation in Virginia.
 W. M. McMurtrie, Note on the chemistry of germination; also Note on absorption of nitrogenous nutriment by the roots of plants.
 J. S. Newberry, Flora of the Amboy clays.
 F. S. Pease, Honey plant oil.
 Mrs. F. S. Pease, The honey plant.
 H. H. Rusby, The cultivated *Cinchonas* of Bolivia.
 J. Schrenk, On the histology of the vegetative organs of *Brasenia peltata*.
 A. B. Seymour, Character of the injuries produced by parasitic fungi upon their host plants.
 Miss Effie A. Southworth, Notes on *Catalpa* leaf spot disease.
 Sereno Watson, Some notes on American roses.

This list does not contain as many papers as were presented by the zoologists of the Association. It was the plan to have botanical papers read before the Section of Biology in the morning and zoological papers in the afternoon, but the plan was strictly carried out only on Thursday, the first day of the meeting on which papers were read, while on Friday, the second day of reading papers, no botanical subjects were put on the programme. If, however, the botanists did not do their full duty in maintaining an equilibrium between the two sides of the biological body, they at least furnished good material for their portion.

Dr. Beal's paper on the hairs in *Silphium* and *Dipsacus*, in which he took the ground that they had no special physiological significance, and that the water of the cups was not excreted by the plant but supplied by rains, was illustrated by charts and specimens, and led to an extended discussion, in which Messrs. Macloskie, Rusby, Schrenk, A. J. Cook, Eccles, and others took part. Some of the speakers were disinclined to agree with the author's conclusions, and the query of what could have caused the development of the hairs in advance of their usefulness to the plant received considerable attention.

The paper by Mr. Bigelow, illustrated by enlarged drawings, cleared up the various conflicting views regarding the apical growth of the sea-

weed, *Champia parvula* Harv., and established the interesting fact that there are five cells at the apex of the frond, instead of one as is usual in other plants. The paper will be published in the Proceedings of the American Academy.

Dr. Britton's paper has already appeared in the August number of the *Bulletin of the Torrey Club*. It dealt with the correspondence of the floral and lithological features in certain parts of New Jersey, especially the occurrence on the Kittatinny mountains of plants whose ordinary habitat is in the sandy soil near the sea-shore. The paper was commended by Prof. T. C. Porter, who spoke of his own studies in the same line, which he hoped to publish after a time.

In the absence of Prof. Coulter his paper on Umbellifer fruits was read by Dr. Beal. The paper did not admit of discussion on account of its technical character; it will be published in this journal.

Dr. Farlow spoke of the confusion which has arisen regarding the apical growth in *Fucus*, illustrating his remarks with blackboard sketches. Investigators have been inclined to think that the growth proceeded from more than one apical cell. This was shown to be untrue, and what does take place was explained, together with the reasons that led other observers to different views.

The outline of Dr. Newberry's remarks on the flora of the Amboy clays was published some time since in the *Bulletin of the Torrey Club*.

The two papers on the honey plant were read for the authors. The plant, *Echinops sphærocephalus*, thistle-like in appearance, growing four to five feet high, has been discovered to be of more than usual value for bees. It is hardy at Buffalo, N. Y. The seeds, about the size and form of rye, yield more oil than linseed, being as much as four and a half ounces to the pound when crudely expressed. The residue left after removing the oil is very bitter like quinine, but the active principle has not been examined. Samples of the plant and its products were exhibited. The paper was discussed by Messrs. Morong, Britton, Claypole, and Mrs. Wolcott, especially as to the literature of the subject and the possibility of the plant becoming a troublesome weed if allowed to escape from cultivation.

Dr. Schrenk's paper on the minute structure of *Brasenia* was a long and able account of an interesting investigation. It was illustrated by growing plants, sections under the microscope, and enlarged drawings.

Proterogyny in *Datura meteloides*.—I have been cultivating this species for ornament, and by accident discovered the peculiar way in which the stigma is in a position in which it may be fertilized before the pollen of its own flower is shed.

As is well known the corolla, in æstivation, is plicate-convolute or supervolute, and opens in the evening twilight and begins to close and droop shortly after sunrise the following morning. From twenty-